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## THE GENUS STREPTOPUS IN EASTERN AMERICA.

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THE two "Twisted Stalks," *Streptopus amplexifolius* (L.) DC. and *S. roseus* Michx., are common in woodlands of eastern Canada and many portions of the northern United States; and though both plants have the solitary erect stem springing from a short thick caudex and usually forking above, they are in many technical characters clearly distinct. The stems of *S. amplexifolius* are whitish and glabrous above, in *S. roseus* greenish and usually ciliate-hispid above. The strongly glaucous amplexicaul leaves of *S. amplexifolius* are glabrous throughout, those of *S. roseus* green, scarcely amplexicaul, and conspicuously ciliate on the margins. The perianth of *S. amplexifolius* is campanulate at base, but the segments spread widely from near the middle and quickly become recurved; that of *S. roseus* campanulate, the segments slightly if at all divergent, only the old shriveling tips becoming recurved. The anthers of *S. amplexifolius* are lance-subulate, entire, and many times longer than the filaments; of *S. roseus* narrow-ovate, bicuspidate, and about the length of the filaments. The stigma of *S. amplexifolius* is subentire or merely shallow-lobed, of *S. roseus* deeply 3-cleft.

Besides these two well-known plants, another species, *Streptopus brevipes* Baker (*S. curvipes* Vail) occurs in the mountains from Alaska to Oregon. It resembles a small simple-stemmed *S. roseus* but has shorter pedicels and a very slender elongate rootstock. So far as known this characteristic plant does not occur east of the Rocky Mountains.

In northern Michigan, however, there is a plant which in its slender rootstock is apparently nearest related to the northwestern *S. brevipes*,



but which has the stem forking, the leaves glaucous and soft-ciliate, and the pedicels and flowers much longer than in *S. brevipes*; and in the alpine regions of the Shickshock Mountains of eastern Quebec there is another plant with a simple or subsimple stem suggesting *S. brevipes*, but with short thick caudex and ciliate leaves much as in *S. roseus*, and purplish flowers structurally like those of *S. amplexifolius*. These two plants, that of northern Michigan with slender rootstocks, and the Shickshock plant with usually simple stems, ciliate leaves and strongly recurved perianth segments, are apparently species which have heretofore been unrecognized in our flora. In order to make clearer the affinities of these plants, the characters of the other eastern species of *Streptopus* are briefly included in the following synopsis.

\* Rootstock short and thick.

+ Perianth-segments wide-spreading or recurved from near the middle: anthers lance-subulate, entire, many times exceeding the filaments: stigma subentire or merely lobed.

**STREPTOPUS AMPLEXIFOLIUS** (L.) DC. *Stem* forking, very rarely simple, 3–9 dm. high, *whitish-green and glabrous* except occasionally at base: *leaves* amplexicaul, *glabrous throughout, glaucous beneath*: *peduncles* glabrous, simple or forked, in anthesis 1.5–3 cm., in fruit 1.5–8 cm. long: *perianth* greenish-white or sometimes roseate, its lance-attenuate segments 8–11 mm. long: fruit globose to ellipsoid, 1–2 cm. long, scarlet.—Fl. Fr. iii. 174 (1805). *S. distortus* Michx. Fl. i. 200 (1803). *S. amplexicaulis* Poir. Dict. vii. 467 (1806). *S. amplexifolius*,  $\beta$ . *americanus* Roemer & Schultes, Syst. vii. 311 (1829). *Uvularia amplexifolia* L. Sp. 304 (1753).—Throughout the forested area from Labrador to Alaska, south to the mountains of North Carolina, Michigan, South Dakota, New Mexico, and northern California; in eastern Quebec ascending to subalpine regions: Greenland, Europe, and Asia.

***S. oreopolus*** sp. n. *Caule* simplice vel semel furcato 2–3.5 dm. alto viridi ciliato-hispido; *foliis* ovatis vel lanceolatis subamplexicaulibus ciliato-denticulatis, supra viridibus subtus pallidis vix glaucis 3–8.5 cm. longis 0.7–3 cm. latis; *pedunculis* exigue hispidulis 1–3 cm. longis; *perianthio* vinaceo, *segmentis* lanceolato-attenuatis superne falcatis 8–12 mm. longis; *antheris* lanceolato-subulatis integris quam filamenta longioribus; *stigmatibus* subintegris vel trilobatis.

*Stem* simple or once forked, 2–3.5 dm. high, *green, ciliate-hispid*: *leaves* ovate or lanceolate, slightly amplexicaul, *ciliate-denticulate*, green above, *pale but scarcely glaucous beneath*, 3–8.5 cm. long, 0.7–3 cm. broad: *peduncles* sparingly hispidulous, 1–3 cm. long: *perianth* claret-color, the lance-attenuate strongly falcate segments 8–12 mm.



long: anthers lance-subulate, entire, longer than the filaments: stigma subentire or 3-lobed: fruit unknown.—QUEBEC, mossy knolls and damp rocks above timber-line, altitude 1000–1050 meters, Mt. Albert, Gaspé County, August 8–15, 1905 (*J. F. Collins & M. L. Fernald*).

+ + Perianth-segments with the tips only recurved in age: anthers ovate 2-horned, shorter than or about equalling the filaments: stigma 3-cleft.

*S. ROSEUS* Michx. Stem usually forked, rarely simple, 2.5–6 dm. high, often hispidulous above: leaves slightly or scarcely amplexicaul the margins ciliate: peduncles simple or forked, 1–2.5 cm. long: perianth pink-purple, the lanceolate segments 8–12 mm. long: fruit subglobose, about 1 cm. in diameter, cherry-red.—Fl. i. 201, t. 18 (1803). *Uvularia rosea* Pers. Syn. i. 360 (1805). *Hexorima dichotoma* Raf. Med. Rep., Hex. 2, v. 351 (1808) and Journ. de Phys. lxxxix. 262 (1819). *Hekorima dichotoma* Kunth, Enum. iv. 204 (1843).—In woods, Newfoundland to the mountains of Georgia, west to Wisconsin and Manitoba; in New England ascending to the subalpine districts.

\* \* Rootstock slender and wide-creeping.

***S. longipes*** sp. n. Rhizomate elongato tenui (2–4 mm. diametro); caule furcato apice ciliato-hispido 3–4 dm. alto; foliis ovatis vel ovato-lanceolatis sessilibus ciliatis, subtus pallidis, 4–6.5 cm. longis 1.5–3 cm. latis; pedunculis ciliato-hispidulis 1.5–2 cm. longis; perianthio campanulato rubello, segmentis lanceolato-attenuatis 10–12 mm. longis; antheris lanceolato-ovatis bifidis quam filamenta brevioribus; stigmatе trifido.

Rootstock elongate, 2–4 mm. in diameter: stem forked, ciliate-hispid above, 3–4 dm. high: leaves ovate or ovate-lanceolate, sessile, ciliate, pale beneath, 4–6.5 cm. long, 1.5–3 cm. broad: peduncles simple, ciliate-hispid, 1.5–2 cm. long: perianth campanulate, reddish, the lance-attenuate segments 10–12 mm. long: anthers lance-ovate, 2-horned, shorter than the filaments: stigma 3-cleft: fruit unknown.—MICHIGAN, in forest of *Acer Saccharum*, Turin, Marquette County, June 5, 1901 (*Bronson Barlow*).—Resembling a pale-flowered *S. roseus*, but clearly distinct in its slender elongate rootstock. Nearer the northwestern *S. brevipes* which has simple stems, darker entire or denticulate but scarcely ciliate leaves, shorter peduncles (in fruit rarely 1 cm. long) and shorter perianth (5–9 mm. long).

GRAY HERBARIUM.